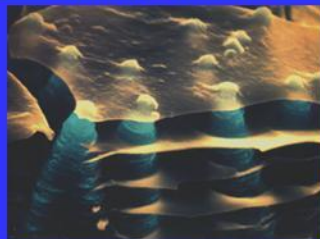


### Major Topics:

- Combinatorial *in vitro* and *in vivo* peptide selection
- Post-selection Protein Engineering
- Peptide binding: Assembly, Kinetics, & Thermodynamics
- Molecular Structure: Experimental (NMR, AFM, Spectroscopy)
- Molecular Structure: Modeling (MD, Steered MD)
- Bioinformatics Based Protein/Peptide Design
- Hybrid Molecular Constructs
- Designer and Designed Protein-Based Molecular Templates
- Applications—Molecular Tools:
  - Molecular Erectors
  - Molecular Assemblers
  - Genetic Linkers
  - Molecular (cancer) Probes
  - Designed Molecular Matrices for Regenerative Medicine
  - Peptide Amphiphiles
  - Opto-electronic devices
  - Inorganic Synthesizer
  - Nanomagnetic Bracers
  - Self-assembled Nanostructures



Growing edge of an abalone shell showing self-assembly of  $\text{CaCO}_3$  tablets and organic matter (proteins + polysaccharides) forming a layered composite, nacre - "mother-of-pearl", the toughest ceramic-based composite ever fabricated.

## MOLECULAR BIOMIMETICS- Protein-based Materials & Systems for Technology & Medicine

September 6-8, 2006,  
Friday Harbor Marine Labs  
(University of Washington)  
San Juan Island, WA, USA

With wisdom gained from her long experience, Mother Nature has evolved mechanisms of simplicity and elegance to synthesize soft and hard tissues exhibiting remarkable functional properties. Nature achieves these feats of engineering by making use of molecular building blocks and by controlling materials assembly in a hierarchical manner from the nano-, to micro-, and to the macro-scale. By merging recent advances in *molecular biology, bioinformatics, and genetics* with state-of-the-art *engineering and technology* from the physical sciences, the goal of this **Workshop** is to provide a platform for interdisciplinary scientists, engineers, & technologists to shift the biomimetic materials science paradigm from imitating Nature to designing and genetically engineering protein-based molecular materials and systems for engineering and medical applications.



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Fax (for all): (206) 543-6361

See: <http://www.GEMSEC.washington.edu>  
For further details, registration, schedule,  
accommodations, travel, maps, etc.



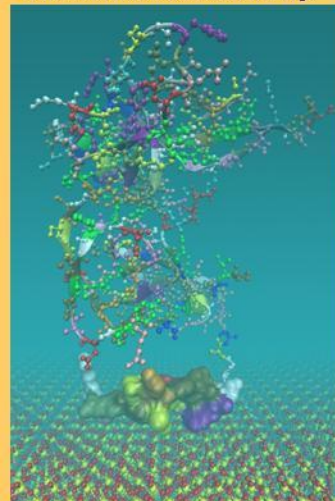
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<http://depts.washington.edu/fhl/>



### A Topical Workshop

For experts, researchers, students, and program managers in medical fields (biochem, molecular biology, microbiology, genomics, dental sciences), basic sciences (physics, chemistry, biology), materials sciences, engineering, & (bio)informatics.

The program includes invited talks, posters, & ample time for discussions in an informal setting.



3D modeling of quartz-binding peptide (QBP) genetically linked to PII coat protein of M13 phage (courtesy - EEOren).

The complete agenda and menu will follow soon.